

REMARKS

Claims 13-44 were pending in this application. In response to the Office Action dated May 3, 2004, claims 45-56 have been added and claims 43 and 44 have been canceled. Care has been exercised to avoid the introduction of new matter. Indeed, adequate descriptive support for the present Amendment should be apparent throughout the originally filed disclosure. Applicants submit that the present Amendment does not generate any new matter issue. Accordingly, entry of the amendment is respectfully requested.

The Examiner indicated that should claims 41 and 42 be found allowable, claim 43 and 44 would be objected under 37 CFR 1.75 as being substantially duplicates thereof. Claims 43 and 44 have been canceled. Accordingly, the objection is moot.

The specification has been checked for minor errors and Applicants submit that no corrections are necessary at the present time.

Claims 13 and 34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tower et al. (U.S. Pat. No. 6,020,628, hereinafter "Tower") in view of Grossinger et al. (U.S. Pat. No. 5,712,622, hereinafter "Grossinger") and Silvestrini et al. (U.S. Pat. No. 4,323,619, hereinafter "Silvestrini").

Claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Tower in view of Grossinger, Silvestrini and Scherber et al. (U.S. Pat. No. 4,708,419, hereinafter "Scherber").

Claims 15 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tower in view of Grossinger and Silvestrini, and further in view of Carnall, Jr. et al. (U.S. Pat. No. 3,131,238, hereinafter "Carnall").

Claims 17 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tower in view of Grossinger, Silvestrini and Scherber, and further in view of Carnall.

Claims 19 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tower in view of Grossinger and Silvestrini and further in view of Roy et al. (U.S. Pat. No. 3,974,249, hereinafter "Roy").

Claims 21 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tower in view of Grossinger, Silvestrini and Scherber, and further in view of Roy.

Claims 13, 14, 23, 24, 28 and 29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Castleman (U.S. Pat. No. 6,153,881) in view of Grossinger and Silvestrini

Claims 25-27 and 30-33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Castleman in view of Grossinger and Silvestrini and further in view of Erismann (U.S. Pat. No. 5,818,337).

Claims 35, 36 and 38-40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Castleman in view of Grossinger and Silvestrini and further in view of Adachi et al. (U.S. Pat. No. 4,302,674, hereinafter "Adachi").

Claims 37 and 41-44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Castleman in view of Grossinger, Silvestrini and Adachi and further in view of Erismann.

Applicants respectfully traverse each of the rejections under 35 U.S.C. § 103(a) identified above for the reasons set forth *infra*. Moreover, new claims 45-56 are free from the applied art. Applicants submit that none of the applied references, alone or in combination, teaches or remotely suggests the claimed subject matter of claims 13-42 and 45-56.

Independent claim 13 describes a ceramic infrared sensor, having a lens body, comprising ceramic, a supporting part, which supports the lens body, and a detection part, which detects the light that has been transmitted through the lens body. A pigment that shields visible light is contained in the lens body and the pigment in the lens body is in a range of 0.001 to 1 mass %.

Independent claim 14 describes a ceramic infrared sensor, having a lens body, which is comprised of a ceramic part and a resin layer that covers at least the light receiving surface of the ceramic part, a supporting part, which supports the lens body, and a detection part, which detects the light that has been transmitted through the lens body. A pigment that shields visible light is contained in the ceramic part and/or resin layer of the lens body and the pigment in the lens body is in a range of 0.05 to 2 mass %.

Thus, independent claims 13 and 14 both recite the amount of pigment in the lens body. Claim 13 recites that the amount is in a range of 0.001 to 1 mass % and claim 14 recites that the amount is in a range of 0.05 to 2 mass %.

In the Office Action, at numbered paragraph 15, the Examiner maintained the rejection and asserted that Grossinger discloses a lens with pigments particles (10 % or less) that shield visible light from the sensor without distorting or attenuating infrared radiation. Moreover, the Examiner asserted that Silvestrini discloses that carbon black of the MT type absorbs light of less than a 3 μm wavelength. Applicants respectfully traverse the Examiner's conclusion that it would have been obvious to one having ordinary skill in the art to have modified the primary references (Tower or Castleman) to provide less than 10% pigment in the lens in order to shield the optically active portion of the electronic device from visible light without distorting or attenuating the desired wavelength of infrared radiation, as allegedly taught by Grossinger. Applicants respectfully submit that none of the references either alone or in combination, disclose or remotely suggest the claimed amount of pigment in the lens body, as recited in claims 13 and 14.

Grossinger discloses that the additive is a white pigment only. Therefore, according to the principle of attenuating noise light by scattering, the noise strength varies depending on the distance from the detection part. As the distance gets smaller, the noise strength gets larger. In contrast, in

accordance with the principles of the present invention, the light is efficiently absorbed by the blackish pigment as the additive, or absorbed by the mixture of the blackish pigment and whitish pigment. Both the mechanism and the concept of the invention is completely distinct form that of Grossinger. Further, zinc sulfate (ZnSO_4) mentioned in Grossinger has a strong characteristic to absorb light of a 9 μm and 11 μm wavelengths. It is doubtful that the transmissivity is not low in the range of 7-14 μm . In this regard, the Examiner's attention is directed to the Nyquist et al. reference (pp 278-279) cited in the accompanying Information Disclosure Statement.

Moreover, Grossinger describes, at column 1, lines 55-58, that when the noise light is absorbed by the window, the window is heated. Thus, the resulting secondary radiation may cause problems. As described in the present application, the white pigment requires thermal conductivity. It is important that the thermal conductivity is good, and that the heat is released from the lens. Therefore, in the structure of the present invention where the resin layer is integrally formed with the ceramics lens, the heat is released from the ceramics having good thermal conductivity. In contrast, in the structure of Silvestrini, only the resin body having poor thermal conductivity is used. Therefore, it is not possible to avoid the above-described problem. For this reason, the concept of the applied prior art is totally different from the present application. It is well settled that the recognition of the source of a problem constitutes evidence of nonobviousness. *In re Sponnoble*, 405 F.2d 578, 160 USPQ 237 (CCPA 1969).

Moreover, none of the remaining secondary references remedy the above described deficiencies. Ergo, even if somehow the applied references were press fit together, the claimed invention would not result. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988).

Applicants submit that none of the applied references alone or in combination, disclose or remotely suggest the recited pigment amounts in independent claims 13 and 14. The separate patentability of newly added dependent claims 45-56 are advanced. New claims 45-56 are free from the applied art. Applicants submit that none of the applied references, alone or in combination, teaches or remotely suggests the claimed subject matter of claims 13-42 and 45-56.

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge readily available to one of ordinary skill in the art. *In re Kotzab*, 217 F.3d 1365, 1370 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). There must be a teaching or suggestion within the prior art, within the nature of the problem to be solved, or within the general knowledge of a person of ordinary skill in the field of the invention, to look to particular sources, to select particular elements, and to combine them as combined by the inventor. *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 665, 57 USPQ2d 1161, 1167 (Fed. Cir. 2000); *ATD Corp.*, 159 F.3d at 546, 48 USPQ2d at 1329; *Heidelberger Druckmaschinen AG v. Hantscho Commercial Prods., Inc.*, 21 F.3d 1068, 1072, 30 USPQ2d 1377, 1379 (Fed. Cir. 1994). Accordingly, for the reasons set forth above, Applicants submit that the rejections under 35 U.S.C. § 103(a) are not legally viable and should be withdrawn.

It is believed that all pending claims are now in condition for allowance. Applicants therefore respectfully request an early and favorable reconsideration and allowance of this application. If there are any outstanding issues which might be resolved by an interview or an Examiner's amendment, the Examiner is invited to call Applicants' representative at the telephone number shown below.

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To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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